one second mirror is arranged to reflect an image of an object on the stage from the first mirror, when the carriage is in the first position, onto the screen. An actuator is operably connected to the carriage, the actuator shifting the carriage between the first position and the second position, and shifting the block holder between the third position and the fourth position, so that the display image on the screen is superimposed over the image of the object on the stage when the carriage is in the first position.

[0010] Another aspect of the invention comprises an image alignment device including a liquid crystal display having a first region and a second region and a first side and a second side. A backlight is mounted over the first region of the second side. A processor is operably connected to the liquid crystal display for generating an image on the liquid crystal display, while a projector projects an image against the second region of the second side so that the generated image on the liquid crystal display second portion is superimposed over the projected image when the display screen is viewed from the first side.

[0011] A further aspect of the invention comprises a lens alignment device with a stage for supporting a lens blank and an at least partially translucent screen having a first side and a second side. An image generator generates an image on the screen and a projector projects an image of an object on the stage against the second side of the screen, so that, when the screen is viewed from the first side, the generated image is superimposed over the projected image.

[0012] The invention also comprises a method of blocking a lens blank that involves providing an at least partially translucent screen having a first side and a second side and placing a lens blank on a stage near the screen. Alignment markings are generated on the screen while a non-inverted image of a lens blank supported on the stage is projected against the second side of the screen. The lens blank having alignment markings is moved with respect to the stage until the image of the lens and its alignment markings projected on the screen is aligned with the generated alignment markings on the screen. A lens block bearing an adhesive is provided at a predetermined location adjacent the stage and moved from the predetermined location into contact with the lens blank to adhere the lens block to the lens blank.

[0013] Another aspect of the invention is a lens blocking device having a frame, a light source mounted within the frame, and a carriage having a first end and a second end mounted for sliding movement between first and second positions with respect to the frame. A first mirror is mounted on the carriage first end and a lens block holder is mounted on the carriage second end so that it is shiftable between third and fourth positions with respect to the carriage. A transparent stage having an opening is mounted between the light source and the carriage, and an LCD having a first region and a second region and a first side and a second side is mounted on the frame. A backlight overlies the LCD first region on the second side and a processor generates alignment markings on the LCD second region and alphanumeric characters on the screen first region. At least one second mirror is mounted on the frame and arranged to reflect an image of an object on the stage reflected from the first mirror, when the carriage is in the second position, onto the second side of the second portion of the LCD. Optics are also provided between the first mirror and the at least one second mirror for inverting an image reflected from the first mirror. An actuator is operably connected to the carriage for selectively shifting the carriage between the first and second positions and the lens block holder between the third and fourth positions. In this manner, the generated alignment markings on the screen second region overlie the image of the lens blank reflected on the second side of the screen when the carriage is in the first position.

[0014] Another aspect of the invention comprises a method of positioning a lens blank for blocking that involves providing a screen having a first side and a second side adjacent to a stage and placing a lens blank on the stage. The lens blank has a first surface facing the stage with reference markings on the first surface. Alignment markings are generated on the screen so that they are viewable from the first side of the screen, and a non-inverted image of the reference markings on the first side of the lens blank are projected onto the second side of the screen. The lens blank is moved with respect to the stage while directly viewing the real image of the lens blank and the generated alignment markings until the image of the reference markings on the lens blank projected on the screen are aligned with the generated alignment markings on the screen.

[0015] Another aspect of the invention comprises a method of positioning a lens blank for blocking that involves providing a screen having a first side and a second side and a stage. A lens blank is placed on the stage, and alignment markings are generated on the screen so that they are viewable from the first side of the screen. An enlarged image of the lens blank is projected onto the second side of the screen, and the lens blank is moved with respect to the stage while viewing the enlarged image of the lens blank and the generated alignment markings until selected portions of the enlarged image of the lens blank projected on the screen are aligned with the generated alignment markings on the screen.

BRIEF DESCRIPTION OF THE DRAWINGS

[0016] The present invention will be better understood after a reading of the following detailed description of the invention in connection with the following drawings.

[0017] **FIG. 1** is a front elevational view of an alignment device according to the present invention.

[0018] **FIG. 2** is a perspective view of the alignment device of the **FIG. 1** with the keyboard removed and the carriage positioned in the alignment position.

[0019] **FIG. 3** is a perspective view of the alignment device of **FIG. 1** with the keyboard removed and the carriage positioned in the blocking position with the block holder raised.

[0020] **FIG. 4** is a schematic view of the optical system of the alignment device of **FIG. 1**.

[0021] **FIG. 5** is a left side elevational view of the alignment device of **FIG. 1**.

[0022] **FIG. 6** is a rear elevational view of the alignment device of **FIG. 1** with a rear portion of the device frame removed to show the interior of the device.

[0023] **FIG. 7** is a detail perspective view of the interior of the lamp assembly housing and lamp assembly door shown in circle VII of **FIG. 2**.